



## PyroGenesis Provides Update on Additive Manufacturing Strategy; on Schedule for Q1 2017 Powder Production

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**MONTREAL, QUEBEC--(Marketwired - Jan. 23, 2017) - PyroGenesis Canada Inc.** (<http://pyrogenesis.com>) (TSX VENTURE:PYR) (OTCQB:PYRNF), a clean-tech company (the "Company" or "PyroGenesis") that designs, develops, manufactures and commercializes plasma waste-to-energy systems and plasma torch products, provides herein a general update on its previously announced additive manufacturing strategy.

Mr. P. Peter Pascali, President and CEO of PyroGenesis, provides this update in the following Q&A format. The questions for the most part are derived from inquiries received from investors, analysts, and potential customers:

*On October 25, 2016, PyroGenesis provided an update which reviewed, amongst other things, the following:*

- PyroGenesis produces very small, uniform, spherical Titanium powders that flow like water, and which are highly sought after in the Additive Manufacturing Industry;
- PyroGenesis has previously sold these powders to the Biomedical Industry (2001-2004);
- In 2015, PyroGenesis invested approximately \$2MM in improving both the production rate and particle size distribution of its technology, which has resulted in a patent pending for such improvements;
- PyroGenesis' decision to enter into powder production for the Additive Manufacturing Industry, as opposed to manufacturing powder production systems;
- First system to be installed by Q1 2017;
- Company's plan to spin-off its Additive Manufacturing capabilities in 2017.

*Q. Could you please update us on the current milestones to reach powder production?*

A. Most certainly.

As we have previously stated, our first powder production system (the "System") is scheduled to be up and running by the end of Q1 2017. This means that, within this timeframe, we will have received all parts, assembled the System, completed commissioning of the System, and conducted the first powder run.

The only major items that have yet to be received are the reactor and the feeder, both of which are expected to be delivered in the second half of February. Assembly is expected to be completed within two (2) weeks of receipt of these items and commissioning within an additional two (2) weeks thereafter. The first powder run is scheduled for the last week of March.

We note that although there may be delays from suppliers, we believe we have sufficiently estimated for such uncertainties as best as we can, and are confident the first powder run will be completed on schedule.

*Q. After the completion of the first powder run, what is the expected ramp up schedule, and when will you be selling powders?*

A. It is important to understand that, irrespective of us being in the ramp up phase, our powders will still be available for sale; all of which will come with a certificate of analysis. Our goal is to ramp up to full capacity, linearly, over the ensuing four (4) months after the first powder run.

In parallel, PyroGenesis' existing quality control system (ISO 9001:2008 certified) will be expanded to include additional protocols required by the Additive Manufacturing Industry.

*Q. Might you be undertaking any other developments during this time?*

A. As previously disclosed, in 2015 we improved certain elements of our process including, amongst other things, the production rate and particle size distribution; two of the most important characteristics of the process. We spent over \$2MM on improvements, resulting in a patent pending with respect to such improvements.

Where time permits, and never putting the ramp up schedule at risk, PyroGenesis intends to test other production rate/particle size distribution improvements. With one of the largest concentrations of plasma expertise in the world, PyroGenesis believes it is uniquely positioned to develop such improvements.

It is PyroGenesis' goal to become a leading supplier of high purity powders, specifically catering to the Additive Manufacturing Industry. Our initial focus will be to produce pure Titanium and Ti-6Al-4V powders, with additional powders/products being developed to address market needs.

*Q. On October 25, 2016, PyroGenesis provided an update to the announcement in April 2016, wherein the Company announced its intention to spin-off its Additive Manufacturing capabilities to shareholders. Can you elaborate on the status of this?*

A. Certainly.

The market seems to be very interested in where we are in our "spin-off" process. Simply put, we are dedicated to this spin-off for a number of reasons, all of which speak to increasing shareholder value and which we are targeting to have completed in 2017.

Over a year ago, we announced our intention to start producing speciality powders for the Additive Manufacturing Industry and, as noted herein, we

are on schedule for powder production in Q1 2017. This original announcement garnered such interest that it became apparent that PyroGenesis shareholders might best be served by spinning off this capability; a spin-off would be less complicated to analyze for investors while providing a clear, well defined, entity with which joint ventures, or even an acquisition could more easily be considered.

Following our announcement to spin off our Additive Manufacturing capabilities, and while completing our analysis of various spin-off options, General Electric ("**GE**") announced its acquisition of Arcam for approximately \$700MM. We note that, Arcam's subsidiary, AP&C, which was acquired by Arcam for CAD 35MM(1) in 2014, produced powders using PyroGenesis' old proprietary technology under an agreement which precluded PyroGenesis from competing against AP&C until 2012. Under Arcam, AP&C became the dominant supplier of speciality powders to the Additive Manufacturing Industry; however as noted above, PyroGenesis has since vastly improved said technology, which improvements remain the sole property of PyroGenesis and have resulted in a patent pending on such improvements.

GE's acquisition of Arcam, and by extension AP&C, has arguably disrupted the supply chain of speciality powders in the Additive Manufacturing Industry, and furthermore, effectively caused end users of such powders to re-examine their access to them, all while PyroGenesis is re-entering the market as a supplier of powders.

Since GE's acquisition of Arcam, there has been an increased interest, by others in the industry, in the timing of both PyroGenesis' powder production and its intention to spin-off its Additive Manufacturing capabilities. This interest has created certain delays as PyroGenesis weighs the possibility of structuring the spin-off to include agreements, contracts and/or partnerships; any of which would increase the value of the spin-off to shareholders.

Notwithstanding the above, PyroGenesis is, barring any developments to the contrary, committed to a spin-off in 2017.

*Q. Could you explain why the Board of Directors of PyroGenesis has decided to start producing powders for the Additive Manufacturing Industry?*

A. That is an interesting question.

As you may or may not know, PyroGenesis has historically produced these very same powders for the Biomedical Industry, which industry liked the powders as they flowed like water, and were greatly sought after to produce biomedical implants like titanium knee replacements. As such, we are already familiar with operating these systems.

PyroGenesis got out of the business of powder production for the simple reason that it became apparent that the Biomedical Industry was only interested in a particular particle size and were not interested in purchasing all of PyroGenesis' production; however we decided to re-enter the market when we saw an increased demand, by the Additive Manufacturing Industry, for the exact powders we have previously produced.

Our internal analysis reflected that each of our systems could generate up to \$12MM in revenues while maintaining, or exceeding, our internal requirement for a minimum 40% gross margin. It also concluded that if we doubled capacity every year from internally generated cash flow alone, by 2020 we would have addressed less than 10% of projected demand for metal powders by the Additive Manufacturing Industry(2). All this to say, we don't have to corner the market.

That said, based on this analysis, and the fact that our process is extremely flexible, we decided to start producing powders for the Additive Manufacturing Industry as soon as possible.

*Q. Conclusion?*

A. There has been a lot of consolidation within the Additive Manufacturing Industry since the time PyroGenesis announced its decision to start producing powders, with significant interest and attention turning to the supply of powder for 3D printers. This interest in PyroGenesis' decision to re-enter the market as a powder supplier has also increased as a result of this consolidation.

We underscore the fact that we are on schedule to be producing powders in Q1 2017, and expect to, as a minimum, double capacity every year from cash flow alone; however we further note that options to accelerate this will be considered once we are in a better position to quantify demand. We expect this to be a significant revenue contributor to the Company in the very near future.

#### **About PyroGenesis Canada Inc.**

PyroGenesis Canada Inc. is the world leader in the design, development, manufacture and commercialization of advanced plasma processes. We provide engineering and manufacturing expertise, cutting-edge contract research, as well as turnkey process equipment packages to the defense, metallurgical, mining, advanced materials (including 3D printing), oil & gas, and environmental industries. With a team of experienced engineers, scientists and technicians working out of our Montreal office and our 3,800 m<sup>2</sup> manufacturing facility, PyroGenesis maintains its competitive advantage by remaining at the forefront of technology development and commercialization. Our core competencies allow PyroGenesis to lead the way in providing innovative plasma torches, plasma waste processes, high-temperature metallurgical processes, and engineering services to the global marketplace. Our operations are ISO 9001:2008 certified, and have been ISO certified since 1997. PyroGenesis is a publicly-traded Canadian company on the TSX Venture Exchange (Ticker Symbol: PYR) and on the OTCQB Marketplace (Ticker Symbol: PYRNF). For more information, please visit [www.pyrogenesis.com](http://www.pyrogenesis.com)

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(1) <http://advancedpowders.com/news/arcam-to-make-strategic-acquisition-of-metal-powder-manufacturer-to-secure-supply-of-strategic-raw-materials>

(2) Wohlers Report 2015 (ISBN 978-0-9913332-1-9)

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